The specification teaches on page 18, lines 9-12, "[p]referably, the inductance can be measured using a solenoid coil containing the sample to be measured connected to a resistance/capacitance/inductance (RCL) meter configured to measure inductance." The specification further teaches on page 42, lines 29 and 30, ***"[a]n RCL meter is a device which directly measures inductance."*** (Emphasis added) The specification also teaches on page 22, lines 19-31:

> For example, a solenoid coil can be placed in an oven set to various temperatures and its inductance determined at each temperature.
>
> The temperature-corrected inductance (where the contribution to the inductance from the empty solenoid coil is eliminated) is determined by measuring the temperature of the solenoid coil, determining the inductance of the empty solenoid coil associated with that temperature, and then subtracting that inductance from the inductance of the solenoid coil (measured at the same temperature) containing the sample.

In view of the above-noted portions of the present specification, it is submitted that proper support is provided in the specification for the limitation "a meter for directly reading coil inductance," set out in claims 37 and 44. Accordingly, withdrawal of the § 112 rejection is respectfully requested.

Claims 33, 37, 43 and 44 stand rejected under § 102(b) as being anticipated by U.S. Patent No. 3,896,671 to Marinaccio; and claims 33, 37-49 stand rejected under § 103(a) as being unpatentable over U.S. Patent No. 5,522,660 to O'Dougherty et al. in view of the '671 patent.

With regard to the rejection of claims 33, 37, 43 and 44 based upon the '671 patent, the Office Action states:

> Marinaccio teaches measuring inductance of a molten metal and compensating the measurement based on calibration values determined by taking measurements at various temperatures during calibration.

Marinaccio discloses a metal level indicator comprising a probe 14. The probe 14 includes a core 16 having a pair of inductive coils 18 and 20 wound about it, see column 1, line 68 through column 2, line 2. The '671 patent teaches "[t]he potential across the potential

terminals p is a function of the coil [18] impedance and is converted to a d.c. signal by a suitable detector 43. The output of detector 43 is the temperature signal designated as T_s," see column 2, lines 30-35. Hence, the first signal output by the indicator is a voltage signal T_s. The '671 patent further teaches "[t]he secondary winding 20 *** transmits only the small quadrature voltage which is a function of the liquid metal level. Operational amplifier 44 is connected as a high input impedance detector ***. The amplifier output is converted to a d.c. signal by a detector 45 ***. The output of detector 45 is the uncompensated liquid level signal L_s," see column 2, lines 46-56. Hence, the second signal, L_s, generated by the indicator is also a voltage signal. The '671 patent further teaches, "[t]he presence of surrounding liquid metal varies the coupling between the two coils [of the probe] and affects the emf output across the secondary coil," see column 1, lines 11-13. Hence, the indicator disclosed by Marinaccio outputs two signals, T_s and L_s, both of which are voltage signals. Nowhere, however, does Marinaccio disclose, teach or suggest "providing an instrument for measuring the inductance or the inductive reactance of the sample," as recited in claim 33, or the step of "providing an instrument for measuring the inductance of the sample," as recited in claim 43. Rather, voltage signals are generated, at least one of which varies based on the presence of liquid surrounding the probe. Accordingly, it is submitted that claims 33, 37, 43 and 44 are not anticipated by Marinaccio.

With regard to the rejection of claims 33, 37-49 based on the '660 patent and the '671 patent, the Office Action states:

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to take measurements at various temperatures in the method of O'Dougherty in order to determine the parameters for temperature compensation as taught by Marinaccio.

O'Dougherty et al. teach a chemical concentration measuring device 36 comprising first and second concentration probes or sensors 37, 38. Each sensor 37, 38 comprises first and second coils 49 and 50, and "a temperature sensor 51 for providing an electrical output useful and [sic] analyzing the output from the coils 49, 50 and making a correction for temperature change," see column 6, lines 21-24. An AC signal is provided to each first coil 49, thereby creating an induction field around the coil 49. A current is then established in a liquid, "the

magnitude of which is related directly to the conductivity and to the concentration of the chemical concentrate in the blended liquid L, and as a result, a current or responsive signal is created in the other coil 50 to provide the output from the sensor," see column 6, lines 15-20. The output from the coil 50 is amplified, digitized and compared to "information in a look-up table 73, [and] compensated for temperature at 73a," see column 6, line 65 through column 7, line 6. Hence, O'Dougherty does not disclose, teach or suggest "providing an instrument for measuring the inductance or the inductive reactance of the sample," as recited in claim 33, or the step of "providing an instrument for measuring the inductance of the sample," as recited in claim 43. As noted above, Marinaccio also fails to disclose, teach or suggest either of these steps. Accordingly, O'Dougherty and Marinaccio, whether taken singly or in combination, do not disclose, teach or suggest the subject matter set out in claims 33 and 43 and dependent claims 37-42 and 44-49.

In view of the above remarks, applicants submit that claims 33 and 37-49 define patentably over the prior art. Early notification of allowable subject matter is respectfully requested.

Respectfully submitted,
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